学位の種類	博士（医学）
報告番号	甲第１８１３号
学位記番号	第１２９１号
氏名	柴田　峻佑
授与年月日	令和3年 3月 24日
学位論文の題名	Reasons for Undergoing CT During Childhood: Can CT-Exposed and CT-Naïve Populations Be Compared? （小児期にCTを撮像する理由：CT被ばくのあった集団と、CT被ばくのなかった集団を比較してよいのか？） Dose-Response: 18(1): 1559325820907011, 2020 doi: 10.1177/1559325820907011
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Reasons for Undergoing CT During Childhood: Can CT-Exposed and CT-Naïve Populations Be Compared?

Abstract

Several epidemiological studies have been carried out to estimate the risk of developing cancer in children undergoing CT, and these reports have suggested increased risks of developing leukemia, solid cancer, and brain tumor. However, it was questioned whether the group undergoing CT was comparable to that not undergoing CT. To address this issue, we investigated the reasons for undergoing CT in 763 children aged 0 to 19 years in 2013. Their medical records were fully evaluated and symptoms, underlying conditions, reasons for CT, and clinical courses after CT were investigated. Among the 763 children, 66.1% underwent repeat CT after the first examination, and 19.3% underwent CT 8 times or more. Among all the examined children, 8.8% had cancer and 4.7% had cancer-prone conditions such as Down syndrome, tuberous sclerosis, and cirrhosis. Only 11.4% of the 763 children underwent CT because of trauma, and 32.2% of the children had some types of congenital anomaly. The rate of trauma decreased with an increase in the frequency of CT examinations. Since the incidence of congenital anomalies is below 2.5% in the general population, it was concluded that the population of children undergoing CT is completely different from that not undergoing CT. The 2 groups should not be compared.